



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,015	06/07/2001	Masanari Shirai	35.C15425	9251
5514	7590	02/24/2006	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			QIN, YIXING	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	
			2622	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/875,015	Applicant(s) SHIRAI, MASANARI	
	Examiner Yixing Qin	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

In response to applicant's amendment received 11/2/05, all requested changes have been entered.

### ***Response to Arguments***

Applicant's arguments filed 11/02/05 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the space rollers 19 and 20 of Aoyama et al provide a small gap between the developing sleeves and the drum (column 3, lines 35-43). Aoyama further points out in column 3, lines 59-65 that due to this gap created by the space rollers 19, 20, the sleeves 15,17 develop a latent image in a non-contact manner, which indicates that there would be low levels of abrasion since the sleeves 15,17 would not rub against the drum 3.

In regards to the abutment of different areas and the rotational axial direction, one can see from Fig. 3 of Aoyama that Aoyama does indeed disclose these two facts. The Examiner interprets the area that space roller 19 touches the drum 3 and the area

Art Unit: 2622

that space roller 20 touches the drum 3 as different areas on the cylindrical drum 3.

Furthermore, space rollers 19 and 20 do touch the drum 3 in a rotational axial direction.

Simply because space rollers 19 and 20 are one above another does not suggest that they do not touch the drum 3 in a rotational axial direction. Please see the rejection below for more detail.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I. Claims 8 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuchi et al (U.S. Patent No.4,994,853) in view of Aoyama et al (U.S. Patent No. 5,300,987).

#### **1. Claim 8**

- One can see in Fig. 3 of Fukuchi that item 30 is an **image bearing member** and that the arrow indicates that it is rotatable.
- Fukuchi et al discloses in Fig. 3 a diagram of the developing unit of their invention. Furthermore, Fukuchi et al discloses in column 8, lines 57-60 that "...the developing unit [is where] developing devices 31X, 31Y, and 31Z are mounted..." Fukuchi et al discloses in column 3, lines 22-31, a variety of cartridges with varying number of developing sleeves. In Fig. 3, they are showing the one with three colors (Y, M and C). Any of these three developing devices (31X, 31Y, or 31Z) can be read as the "**first developer carrying member.**" One would understand that the touching of any of the developing devices 31X-Z and the image bearing member 30 would create a **first developing area.**

Art Unit: 2622

- As discussed above, the guide members of Fukuchi do not show the abutting of the regulating member against the image bearing member. However, the secondary reference, Aoyama, discloses in Fig. 3 and column 3, lines 35-43 that space rollers 19,20 (i.e. **regulating members**) "...are abutted against drum 3 to create the above-mentioned small gap." The cylindrical developing sleeve 15 would also read on the **first developing member**.
- 31Y, or 31Z of Fukuchi et al can be read as the "**second developer carrying member**," given 31X is the "**first developer carrying member**." One can see that 31Y or 31Z can be downstream from 31X.
- The **second regulating member**, again, would be found in Aoyama, Fig. 3 - space roller 20, given that space roller 19 is the **first regulating member**. The purpose would be the same as the **first regulating member** - to create a small gap.
- One can see in Aoyama, Fig. 3, that the space rollers 19 and 20 abut the drum 3 in different areas and are disposed in a direction orthogonal to the movement direction of the drum 3. The Examiner interprets the area that space roller 19 touches the drum 3 and the area that space roller 20 touches the drum 3 as different areas on the cylindrical drum 3 - i.e. think of the drum 3 as a coke can lying on it's side. The space roller 19 would be, for example, touching the letter "c" and space roller 20 would be, for example, touching the letter "k." These two areas that the space rollers touch can be interpreted as different areas.
- Furthermore, space rollers 19 and 20 do touch the drum 3 in a rotational axial direction. Simply because space rollers 19 and 20 are one above another does not suggest that they do not touch the drum 3 in a rotational axial direction.
- Both references are in the art of printers and their internal design. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Fukuchi and Aoyama to have a developing member with a regulating member that abuts a image bearing member. The motivation would be to regulate a gap between the developing member and the image bearing member in order to reduce the amount of abrasion that would be produced if the developing and image bearing members were to rub constantly.

## 2. Claim 10

- Fukuchi discloses in Fig. 2 (item 310, toner storage device) (see column 8, line 7). One can see that it contains T (toner - i.e. **developer**) and the first developer carrying member (i.e. 31X) is in the opening opposite the toner storage device 310.
- Fukuchi shows separate toner storage devices, but Aoyama discloses in Fig. 2 that both developing members (items 15 and 17) are stored together in the same developing device 6 (see column 3, lines 29-34).
- Aoyama further explains in column 3, lines 59-65 that the thickness of the toner is smaller than the gap (i.e. **restricted by the gap**).

Art Unit: 2622

II. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuchi et al (U.S. Patent No.4,994,853) in view of Fujii (U.S. Patent No. 5,229,821)

3. **Claim 11**

- Although the Fukuchi et al reference discloses in Fig. 2 a direction in which the photoreceptor drum 30 rotates (as seen by the arrow), it does not explicitly disclose the direction in which the developing members 31X, 31Y, and 31Z spin. Although, it can be inferred that they rotate in the same direction since (or seen in Fig. 2, which also applies to Fig. 3) developing sleeve 313 picks up developer "D" and passes 317 to limit the amount picked up (column 8, lines 36-50 and column 7, lines 63-68). Thus, it would appear that 313 (and, similarly, 31X,Y,Z) would rotate in a counter-clockwise direction (even though this is not explicitly stated.)
- However, the secondary reference, Fujii, discloses in column 3, lines 39-41 that "[t]he developing units 10Y, 10M, 10C and 10BK contain a yellow toner, a magenta toner, a cyan toner and a black toner, respectively, each have a developing roller 11." ("**developer carrying member**") One can see from the arrows in Fig. 1 of Fujii that the developing rollers all rotate in the same direction.
- Since both references are in the art of producing colored images, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the rollers roll in the same direction. The motivation would be to ensure that the rollers move in a common direction to prevent the dropping of toner in an incorrect manner on an image bearing member (drum).

4. **Claim 12**

- Again, although the Fukuchi et al reference discloses in Fig. 2 a direction in which the photoreceptor drum 30 rotates (as seen by the arrow), it does not explicitly disclose the direction in which the developing members 31X, 31Y, and 31Z spin. Also, please see the discussion above. However, the secondary reference, Fujii, discloses in Fig. 1 that a photosensitive drum 3 (column 3, line 30) spins in the same downwards direction as the developing rollers 11 at the point of contact as indicated by the arrows, even though the rollers rotate in a counterclockwise and the drum rotates at a clockwise direction. The direction of movement of the rollers 11 (i.e. **has first and second developing areas and both developing members move in the same direction as the image bearing member**) and the drum 3 is the same as those seen in the applicant's drawing in Fig. 1.

5. **Claim 13**

Art Unit: 2622

- Fukuchi et al discloses in column 6, 40-55 the dimensions of the photoreceptor drum and the various developing devices 31X, 31Y and 31Z. Lines 40-41 discloses that "[i]n the present embodiment a photoreceptor drum of 110 mm $\phi$  has been used." Lines 42-55 (in particular lines 45-47, that the "developing device could be adequately reduced to around 30 mm or less by reducing the outer dimension of the developing sleeve to 20 mm $\phi$  .
- Common mechanics shows that if two wheels were to come in contact with each other, the smaller wheel would move faster than the larger wheel because it needs more rotations to cover the same amount of distance moved because of its smaller circumference. From Fukuchi et al's explanation of his invention and his figures, one can see that the drum 30 is a larger wheel than the developing devices 31X, 31Y, and 31Z. Please also note that this is the case in the Fujii reference, Fig. 1.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yixing Qin whose telephone number is (571)272-7381. The examiner can normally be reached on M-F 9:30-6:00.

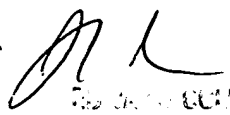
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (571)272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/875,015  
Art Unit: 2622

Page 7

YQ

  
720 000 0015  
SUN 00 000 000 000 000 000  
00 00 00 00 00 00 00 00